Vehicle Infrastructure Integration (VII)

What It Is

The VII program is a cooperative effort between the U. S. Department of Transportation (USDOT), State governments and the automobile industry to develop and test an information infrastructure that uses the most advanced communications technologies to exchange real-time information between the roadside and vehicles to improve safety and mobility. Dedicated Short Range Communications (DSRC) equipment operating in the 5.9 gigahertz frequency range is placed on the roadways and within the vehicle. Specific applications are being developed to test a broad variety of potential safety and mobility uses of the VII system including:

- Warning drivers of unsafe conditions or imminent collisions.
- Warning drivers if they are about to run off the road or speed around a curve too fast.
- Informing system operators of real-time congestion, weather conditions and incidents.
- Providing operators with information on corridor capacity for real-time management, planning and provision of corridor-wide advisories to drivers.

Collision-avoidance technologies that will use the VII infrastructure are being developed as part of the Cooperative Intersections Avoidance (CICAS) program. The automobile industry is also developing prototype private-sector applications for “opt-in” value-added services to drivers. VII seeks to achieve a significant reduction in vehicle crashes, reduce vehicle delay through State and local management of the surface transportation network based on real-time traffic information and reduce the cost of road maintenance.

VII seeks to answer the fundamental question of whether it is technically feasible, economically viable and socially acceptable to coordinate the deployment of a nationwide communication system on the road infrastructure and in all vehicles sold in the U.S. That determination will support a joint decision by the public and private sectors whether to deploy VII in the U.S.

Current Status

Development of the VII network detail design is well underway, construction of the laboratory test environment is in progress, as are the applications development and planning for the proof-of-concept testing in Detroit, Michigan. Development of a cost-benefit model for the VII system is ongoing. In parallel, the auto industry is undertaking its own efforts to investigate the viability of VII. Efforts to define suitable business models, privacy policies, deployment strategies and management models for a national system are well underway.

The Year Ahead

In early 2007, laboratory testing of the prototype VII system will begin. In mid-2007, a proof-of-concept VII system will be installed over an approximately 20-square mile area near Detroit. This test environment will then be used to test 20 prototype VII applications to take advantage of the capabilities provided by the VII network.

For more information go to: http://www.its.dot.gov/vii/index.htm